

WHAT IS CLAIMED IS:

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a:

1. A shadow mask comprising:  
a mask body including a substantially rectangular  
effective area having a minor axis and a major axis  
extending at right angles to each other; and  
5 a large number of electron beam passage apertures  
formed in the effective area,  
each of the electron beam passage apertures being  
formed of a communication hole connecting a larger hole  
10 opening in one surface of the effective area and a  
smaller hole opening in the other surface of the  
effective area,  
in a cross section of the mask body in the major  
axis direction, a joint portion between the larger and  
15 smaller holes of each of at least the electron beam  
passage apertures in the central portion of the  
effective area being situated in a central portion in  
the thickness-direction of the mask body,  
in a cross section of the mask body in the major  
axis direction, a joint portion between the larger and  
20 smaller holes of each of the electron beam passage  
apertures located on the major axis and in the  
peripheral portion of the effective area being situated  
closer to one of the surface sides of the effective  
area than the joint portion of each of the electron  
25 beam passages apertures in the central portion of the  
effective area, the larger hole being offset against

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the smaller hole in the direction of the major axis.

2. A shadow mask according to claim 1, wherein  
said joint portion between the larger and smaller holes  
of each of at least the electron beam passage apertures  
5 in the central portion of the effective area is  
situated within a range of  $0.5 \pm 1/6$  in the thickness  
direction of the mask body, as compared with the  
thickness of the mask body given by 1.

3. A shadow mask according to claim 2, wherein  
said joint portion of each of the electron beam passage  
apertures in a region between the minor axis of the  
effective area and a position at a distance of  $2L/3$  in  
the major-axis direction from the minor axis is  
15 situated within the range of  $0.5 \pm 1/6$  in the thickness  
direction of the mask body, where  $L$  is the length from  
the minor axis of the effective area to a major-axis-  
direction end thereof, and

20 said joint portion of each of the electron beam  
passage apertures in a region at the distance of  $2L/3$   
or more in the major-axis direction from the minor axis  
of the effective area is situated outside the range of  
0.5  $\pm 1/6$  in the thickness direction of the mask body.

25 4. A color cathode ray tube comprising:  
an envelope including a substantially rectangular  
face panel having a phosphor screen on the inner  
surface thereof;

a shadow mask opposed to the phosphor screen; and

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an electron gun for emitting electron beams toward the phosphor screen through the shadow mask,

the shadow mask comprising a mask body including:

5 a substantially rectangular effective area having a minor axis and a major axis extending at right angles to each other and a large number of electron beam passage apertures formed in the effective area,

10 each of the electron beam passage apertures being formed of a communication hole connecting a larger hole opening in one surface of the effective area and a smaller hole opening in the other surface of the effective area,

15 in a cross section of the mask body in the major axis direction, a joint portion between the larger and smaller holes of each of at least the electron beam passage apertures in the central portion of the effective area being situated in a central portion in the thickness-direction of the mask body,

20 in a cross section of the mask body in the major axis direction, a joint portion between the larger and smaller holes of each of the electron beam passage apertures located on the major axis and in the peripheral portion of the effective area being situated closer to one of the surface sides of the effective area than the joint portion of each of the electron beam passages apertures in the central portion of the effective area, the larger hole being offset against

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the smaller hole in the direction of the major axis.

5. A color cathode ray tube according to claim 4, wherein said joint portion between the larger and smaller holes of each of at least the electron beam passage apertures in the central portion of the effective area is situated within a range of  $0.5 \pm 1/6$  in the thickness direction of the mask body, as compared with the thickness of the mask body given by 1.

10 6. A color cathode ray tube according to claim 5, wherein said joint portion of each of the electron beam passage apertures in a region between the minor axis of the effective area and a position at a distance of  $2L/3$  in the major-axis direction from the minor axis is situated within the range of  $0.5 \pm 1/6$  in the thickness direction of the mask body, where  $L$  is the length from the minor axis of the effective area to a major-axis-direction end thereof, and

15 said joint portion of each of the electron beam passage apertures in a region at the distance of  $2L/3$  or more in the major-axis direction from the minor axis of the effective area is situated outside the range of  $0.5 \pm 1/6$  in the thickness direction of the mask body.

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